



SPEC® CINT2006 Result

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Hewlett-Packard Company

SPECint®_rate2006 = 102

HP Integrity rx6600 (1.6GHz/24MB Dual-Core Intel Itanium 2)

SPECint_rate_base2006 = 94.7

CPU2006 license: 03

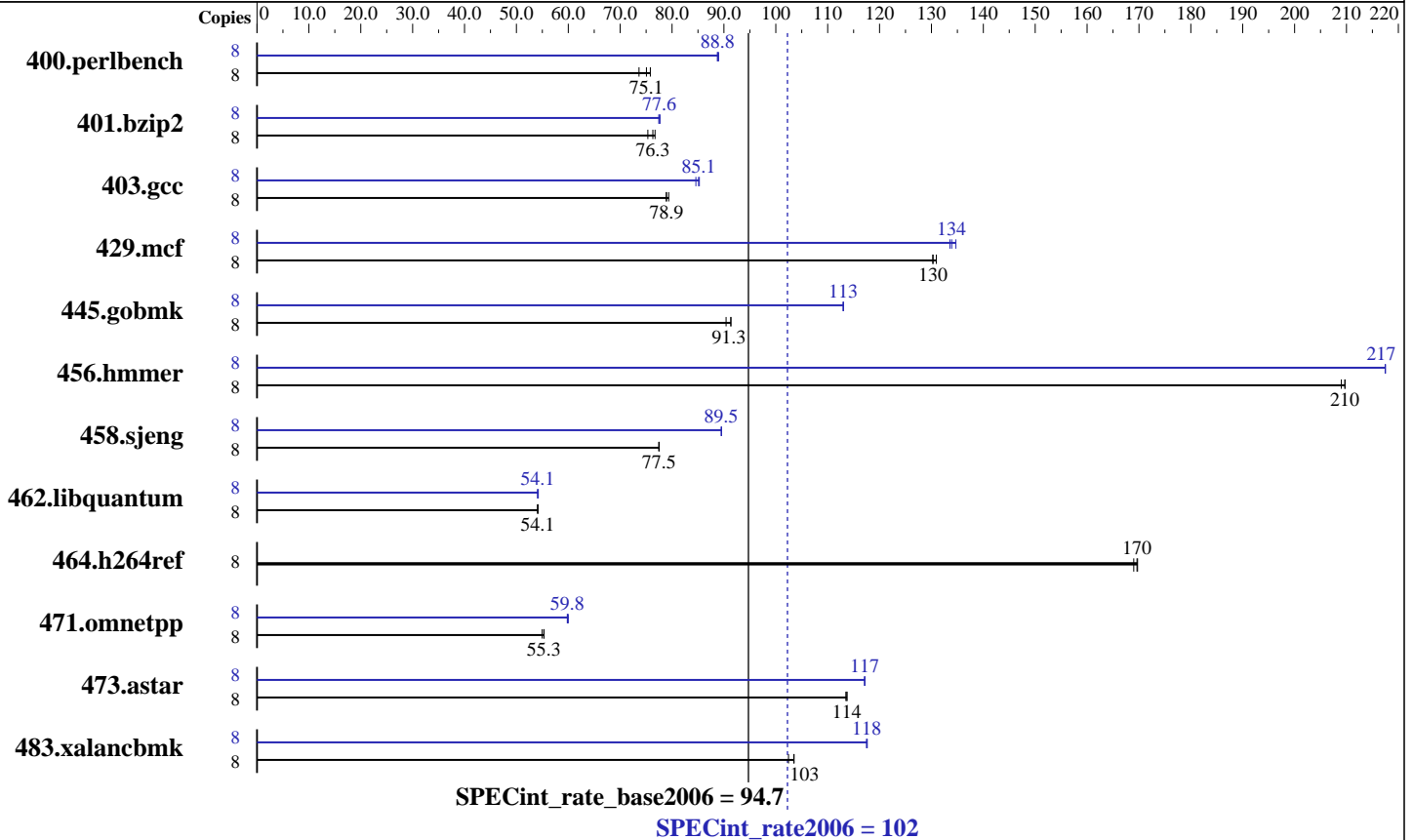
Test date: Aug-2006

Test sponsor: Hewlett-Packard Company

Hardware Availability: Sep-2006

Tested by: Hewlett-Packard Company

Software Availability: Sep-2006



Hardware

CPU Name: Dual-Core Intel Itanium 2 9050
 CPU Characteristics: 1.6GHz/24MB, 533MHz FSB
 CPU MHz: 1600
 FPU: Integrated
 CPU(s) enabled: 8 cores, 4 chips, 2 cores/chip
 CPU(s) orderable: 1-4 chips
 Primary Cache: 16 KB I + 16 KB D on chip per core
 Secondary Cache: 1 MB I + 256 KB D on chip per core
 L3 Cache: 12 MB I+D on chip per core
 Other Cache: None
 Memory: 24 GB (24x1GB DIMMs)
 Disk Subsystem: 73GB 10K RPM SAS
 Other Hardware: None

Software

Operating System: HPUX11i-TCOE B.11.23.0609
 Compiler: HP C/aC++ Developer's Bundle C.11.23.12
 Auto Parallel: No
 File System: vxfs
 System State: Multi-user
 Base Pointers: 32-bit
 Peak Pointers: 32-bit
 Other Software: MicroQuill Smartheap 8.0



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Results Table

Benchmark	Base						Peak							
	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio	Copies	Seconds	Ratio	Seconds	Ratio	Seconds	Ratio
400.perlbench	8	1061	73.6	<u>1041</u>	<u>75.1</u>	1031	75.8	8	<u>880</u>	<u>88.8</u>	878	89.0	881	88.7
401.bzip2	8	1025	75.3	<u>1012</u>	<u>76.3</u>	1006	76.7	8	<u>995</u>	<u>77.6</u>	994	77.7	997	77.4
403.gcc	8	816	78.9	812	79.4	<u>816</u>	<u>78.9</u>	8	755	85.3	761	84.6	<u>757</u>	<u>85.1</u>
429.mcf	8	560	130	<u>560</u>	<u>130</u>	557	131	8	546	134	542	135	<u>545</u>	<u>134</u>
445.gobmk	8	928	90.4	<u>919</u>	<u>91.3</u>	919	91.3	8	<u>743</u>	<u>113</u>	743	113	742	113
456.hammer	8	357	209	356	210	<u>356</u>	<u>210</u>	8	343	218	<u>343</u>	<u>217</u>	343	217
458.sjeng	8	1250	77.5	1248	77.5	<u>1250</u>	<u>77.5</u>	8	1082	89.5	<u>1082</u>	<u>89.5</u>	1081	89.6
462.libquantum	8	<u>3064</u>	<u>54.1</u>	3061	54.2	3065	54.1	8	3065	54.1	<u>3064</u>	<u>54.1</u>	3057	54.2
464.h264ref	8	1048	169	<u>1044</u>	<u>170</u>	1043	170	8	1048	169	<u>1044</u>	<u>170</u>	1043	170
471.omnetpp	8	910	55.0	904	55.3	<u>904</u>	<u>55.3</u>	8	<u>836</u>	<u>59.8</u>	836	59.8	833	60.0
473.aster	8	495	114	<u>494</u>	<u>114</u>	494	114	8	<u>479</u>	<u>117</u>	479	117	480	117
483.xalancbmk	8	539	102	<u>533</u>	<u>103</u>	533	104	8	<u>470</u>	<u>118</u>	470	117	469	118

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

The system had the September 2006 HP-UX 11i v2 Technical Computing Operating Environment (TCOE) and compilers installed, along with the following patches:

```

PHSS_34858 linker + fdp cumulative patch
PHSS_34853 Math Library Cumulative Patch
PHSS_34854 Integrity Unwind Library
PHSS_34855 HP C Compiler (A.06.12)
PHSS_34856 aC++ Compiler (A.06.12)
PHSS_34857 u2comp/be/plugin library patch
PHSS_34395 FORTRAN I/O Library [libIO77]
PHSS_34397 FORTRAN Intrinsics [libF90 B.11.23.17]
PHSS_34399 Fortran Product Patch, v3.1 to v3.1.1
PHKL_34020 Perfmon enhancements and Itanium Dual-Core

```

The following kernel tunables were set, in addition to the defaults set by the Technical Computing OE:

```

dbc_max_pct=20
dbc_min_pct=20
maxdsiz=3221225472
maxssiz=401604608

```



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Base Compiler Invocation

C benchmarks:

`/opt/ansic/bin/cc -Ae`

C++ benchmarks:

`/opt/aCC/bin/aCC -Aa`

Base Portability Flags

400.perlbench: `-DSPEC_CPU_HPUX_IA64`

403.gcc: `-DSPEC_CPU_HPUX`

462.libquantum: `-DSPEC_CPU_HPUX`

483.xalancbmk: `-DSPEC_CPU_HPUX_IA64`

Base Optimization Flags

C benchmarks:

`+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M`

`-Wl,+pi,64M -Wl,-N`

C++ benchmarks:

`+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared -Wl,+pd,64M`

`-Wl,+pi,64M -Wl,-N`

`/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmartheap.a`

Peak Compiler Invocation

C benchmarks:

`/opt/ansic/bin/cc -Ae`

C++ benchmarks:

`/opt/aCC/bin/aCC -Aa`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_HPUX_IA64`

403.gcc: `-DSPEC_CPU_HPUX`

462.libquantum: `-DSPEC_CPU_HPUX`

483.xalancbmk: `-DSPEC_CPU_HPUX_IA64`



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Peak Optimization Flags

C benchmarks:

400.perlbench: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M -Wl,-N

401.bzip2: Same as 400.perlbench

403.gcc: Same as 400.perlbench

429.mcf: Same as 400.perlbench

445.gobmk: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M +Odataprefetch=direct

456.hmmer: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M

458.sjeng: Same as 445.gobmk

462.libquantum: Same as 456.hmmer

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M
/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmartheap.a

473.astar: +Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap
/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmartheap.a

483.xalancbmk: +Oprofile=collect:all(pass 1) +Oprofile=use(pass 2)
+Ofaster +Otype_safety=ansi -Wl,-a,archive_shared
-Wl,+pd,64M -Wl,+pi,64M +Onoparmsoverlap
/usr/lib/hpux32/libCsup.a /opt/smartheap/SmartHeap_8/lib/libsmartheap.a

The flags file that was used to format this result can be browsed at

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.06.html

You can also download the XML flags source by saving the following link:

http://www.spec.org/cpu2006/flags/CPU2006_flags.20090715.06.xml



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